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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/665,208 09/18/00 KANG

C 5649-842

020792 IM22/0829
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EXAMINER

DANG, T

ART UNIT

PAPER NUMBER

1763

DATE MAILED:

08/29/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">09/665,208</p>	<p>Applicant(s)</p> <p align="center">KANG ET AL.</p>	
	<p>Examiner</p> <p align="center">Thi Dang</p>	<p>Art Unit</p> <p align="center">1763</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 23-26, 30, 36, 37, 39, 40 are rejected under 35 U.S.C. 102(e) as being anticipated by *Bhatnagar*.

Bhatnagar discloses a remote-plasma processing apparatus that has a plasma generator (500) connected to a processing chamber (510) (note Fig. 4). *Bhatnagar*'s apparatus also has a wafer support in the processing chamber and quart lamps for heating the wafer (col. 7, lines 19-20). Structurally, the claimed apparatus is the same as that of *Bhatnagar*. The claimed oxygen radical or plasma annealing unit and oxygen radical or plasma annealing chamber read on the plasma generator and processing chamber of *Bhatnagar*'s apparatus, respectively.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 28, 29, 31-35, 38, 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bhatnaga* in view of *Henley et al* (*Henley*).

The above claims basically recite a cluster tool assembly for carrying out multiple device manufacturing steps. *Henley* teaches that it is conventional in the art to have a cluster tool assembly in which a load lock and multiple processing chambers, including plasma processing chambers, are connected to a wafer transfer chamber. It would have been obvious to incorporate *Bhatnaga*'s apparatus in a conventional cluster tool assembly of the type disclosed by *Henley* because such assembly would enable multiple device manufacturing steps without exposing the device being manufactured to the atmosphere.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Shang et al* (*Shang*).

Shang discloses a plasma CVD apparatus that has a remote plasma generator (69) connected to a wafer depositing chamber (10), a substrate support plate (140 and a heater (18) inside the support plate (note Fig. 1, and cols. 3-4). The processing chamber (10) is connected to a gas supply means (32) (see Fig. 1). This gas supply means is capable of supplying cleaning gas to the processing chamber. The claimed apparatus does not define structurally over that of *Shang*.

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6. Claims 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Shang et al* (*Shang*) in view of *Kuwabara et al* (*Kuwabara*).

In *Shang*'s apparatus, the substrate heater (18) is located in the substrate supporting plate, not under the holder as recited in claim 27. *Kuwabara* teaches that it is conventional to provide heating lamps (19) under the substrate holder in a film forming apparatus (note Fig. 18). It would have been obvious to modify *Shang*'s apparatus so that a plurality of heating lamps arranged below the substrate supporting plate are used as the substrate heating means instead of the heater inside the supporting plate. This substitution would have been obvious because *Kuwabara* teaches that the heating lamps have been conventionally used as means for heating a substrate in a plasma CVD chamber and it would have been obvious to substitute one conventional heating means for another.


Shang does not disclose a source supplier as described in claims 28 and 29. *Kuwabara* teaches that it is conventional for a CVD apparatus to have a gas source supplier that includes a flow meter (or liquid mass flow controller) (114), a bubbling container (or evaporator) (911) and a carrier gas source (or transfer gas source) (115) (note col. 7). It would have been obvious to incorporate *Kuwabara*'s gas source supplier in *Shang*'s apparatus when it is desirable to use processing gases that are liquid at ambient temperatures and have low vapor pressures because *Kuwabara*'s gas source supplier is appropriate for supplying such processing gases.

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7. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ms. Thi Dang whose telephone number is (703) 308-1973.


THI DANG
PRIMARY EXAMINER
GROUP 1700